

FOLDABLE CLIP-ON PHONE TRIPOD

BACKGROUND

Field of the Invention

[0001] This invention is in the field of personal cell phone accessories. Specifically, the invention relates to the use of the cell phone camera, which is common in most modern commercial cell phone designs, and a support mechanism so that the camera can be used by placing it on a surface rather than holding the phone by hand.

Related Art

[0002] Personal cell phones, or “smart phones,” are very common consumer electronics items, and capturing pictures and video are some of the most common uses.

[0003] While such devices are very convenient for the capture of hand-held images, in some cases, it is advantageous or necessary to provide a more stable support during operation. Several products exist on the market to support a phone on a stable substrate, in order to take pictures or video, which are designed to be carried separately from the cell phone and attached when needed. Other devices, such as attachable sockets, are designed to stand on a flat surface and to hold a phone at a fixed angle.

SUMMARY OF THE INVENTION

[0004] The invention addresses the problems cited above, and provides a portable folding stand that can be attached or detached from a personal cell phone. When folded it is compact in nature and easy to carry, and when it is unfolded it can support a cell phone on a surface for taking pictures or videos, or viewing the screen, at a wide and continuous range of different angles and orientations.

[0005] The tripod includes set of legs which are foldable into multiple configurations. Attached to the legs is a rotatable arm with a pivoting joint connecting it to the upper stand leg. The rotatable arm is also connected by another rotatable joint to a clip-on attachment which can hold a cell phone in a set of clamping brackets, and the arm is segmented with each of the segments being able to rotate relative to each other.

[0006] In one configuration the legs are able to lay folded together in a single plane, with the rotatable arm and clip-on attachment also folding up into a compact arrangement where they are nestled against one another, reducing the space needed for carrying it when it is not deployed. In another configuration the arm can be rotated to provide a support pillar for the clip-on attachment, while the legs may be rotated to be oriented perpendicular or at angles to one another to provide a tripod-like structure that can support the cell phone at various angles and in different orientations. The rotatable joint connecting the upper stand leg and the stand arm, the rotation of the segments of the stand arm, and the rotation of the clip-on attachment relative to the stand arm define three degrees of orthogonal rotation, allowing the cell phone to be oriented in any angle desired with precise control.

[0007] In addition to being a support structure for a cell phone, embodiments of the invention may also allow the user to attach the invention to a set of keys, making it highly portable, and convenient to carry, and in some embodiments it may include a money clip for carrying paper cash or a

credit card and attaching it to the personal cell phone, giving the invention greater versatility than being solely a device to support and position a phone.

[0008] In a broad aspect, the tripod comprises a first stand leg having first and second ends; a second stand leg having first and second ends, coupled at the first end to the first end of the first stand leg and configured to rotate relative to the first stand leg about a first axis of rotation, the first and second stand legs being configured to rotate into a stowed configuration in which the first and second stand legs lie in a same layer of components; and a stand arm having first and second ends, coupled at the first end to the first stand leg at a point proximate the first end of the first stand leg and configured to rotate relative to the first stand leg about a second axis of rotation perpendicular to the first axis of rotation, and to rotate into stowed configuration in which the stand arm lies in a second layer of components.

[0009] The tripod may further comprise a clip-on attachment coupled to the second end of the stand arm and rotatable relative to the stand arm about a third axis of rotation, the third axis of rotation lying perpendicular to a longitudinal axis of the stand arm, the clip-on attachment having a pair of gripping jaws configured to grip and hold a cell phone in a user-selected orientation.

[0010] Contact points at the second end of the first stand leg and at the first and second ends of the second stand leg may lie in a common plane, the first axis lying normal to the common plane; and while the first and second stand legs are in the stowed configuration the first, second, and third contact points may lie on a common line.

[0011] The tripod may further comprise a third stand leg having first and second legs, coupled at the first end to the first end of the first stand leg and configured to rotate relative to the first stand leg about the first axis of rotation, about which the first end of the second stand leg also rotates relative to the first stand leg.

[0012] The stand arm of the tripod may include first and second segments configured to rotate relative to each other about a third axis, perpendicular to the second axis, the first segment being coupled to the first stand leg. The tripod may further comprise a cell phone holding element coupled to the second segment of the stand arm and is configured to rotate relative to the third axis, about a fourth axis perpendicular to the third axis.

[0013] The cell phone holding element may be configured to engage a cell phone between spring-driven jaws and hold the cell phone in a user-selected orientation. The cell phone holding element may be configured to engage a case mounted to the cell phone.

[0014] These and other features and advantages of the present invention will be more fully understood from reading of the following detailed description with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] FIG. 1 is a perspective drawing of a foldable clip-on phone tripod, in the fully folded configuration, according to an embodiment, attached to a cell phone.

[0016] FIG. 2 is a perspective drawing of the foldable clip-on phone tripod of FIG. 1, unfolded and supporting the phone in a landscape orientation.

[0017] FIG. 3 is a perspective drawing of the foldable clip-on phone tripod of FIG. 1, unfolded and supporting the phone in a portrait orientation.